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EXAMINER	
WANG, BEN C	

ART UNIT	PAPER NUMBER
2192	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/701,143	HOLLAND, STEVEN W.	
	Examiner	Art Unit	
	Ben C. Wang	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment dated February 22, 2007, responding to the November 22, 2006 Office action provided in the rejection of claims 1-20, wherein claims 1, 6, and 11 have been amended, claims 2-5, 7-10, 12-20 are remained as original, and new claim 21 is added.

Claims 1-21 remain pending in the application and which have been fully considered by the examiner.

Applicant's arguments with respect to claims rejection have been fully considered but are moot in view of the new grounds of rejection – see *Rogers et al.* art made of record, as applied hereto.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Claim Rejections – 35 USC § 103(a)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 6-10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coburn et al., (Pat. No. US 6,892,216 B2) (hereinafter 'Coburn') in view of Rogers et al., (Pat. No. US 6,282,469 B1) (hereinafter 'Rogers').

3. **As to claim 6** (Currently Amended), Coburn discloses a vehicle, comprising: an open architecture communications port (Fig. 2, items 140 & 190; Col. 2, lines 3-6; Col. 4, lines 14-17, lines 35-36); multiple processors (Fig. 1, item 130; Fig. 2, item 130; Col. 2, line 66 through Col. 3, line 2) connected to a system bus (Col. 2, lines 3-5) of the vehicle and adapted to generate diagnostic information (Col. 3, lines 49-59); an interface processor (Fig. 2, item 200) in communication with the open architecture communications port (Fig. 2, items 140 and 190; Col. 3, lines 22-27) and connected to the system bus (Col. 2, lines 3-6), wherein said to load software received over said open architecture communications port onto said multiple processor (Fig. 3, steps 303, 305, 306 and 307; Col. 7, lines 8-14), and to transmit diagnostic information received from said multiple processors via said open architecture communications port (Col. 3, lines 49-59; Fig. 2, item 190).

Coburn does not explicitly discloses identifying, for each of said multiple processor, files stored on a portable memory device connected to said open architecture communications port.

However, in an analogous art of computerized automotive service equipment using multipoint serial link data transmission protocol, Rogers discloses identifying, for each of said multiple processor, files stored on a portable memory device connected to said open architecture communications port (Fig. 7, elements 214 – Micro-Controller, 224 – MicroController, 202 – Universal Serial Bus Controller (Master), 212 – Universal Serial Bus Controller (Node), 222 – Universal Serial Bus Controller (Node); Col. 7, Line through Col. 8, Line 29).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Rogers into the Coburn's system to further identify, for each of said multiple processor, files stored on a portable memory device connected to said open architecture communications port in Coburn system.

The motivation is that it would further enhance the Coburn's system by taking, advancing and/or incorporating Roger's system which offers significant advantages which multiple distinct vehicle servicing applications may be added to or removed from the service bay without requiring substantial software changes or revisions; the amount of vehicle diagnostic hardware is also minimized as once suggested by Roger (i.e., Abstract, Lines 4-7).

4. **As to claim 7** (Original), Coburn discloses said multiple processors (Fig. 1, item 130; Fig. 2, item 130; Col. 2, line 66 through Col. 3, line 2) are adapted to test vehicle software upon installation of the vehicle software (Col. 3, line 49-59), thereby generating diagnostic information (Col. 3, lines 54-59) indicating whether said interface processor has successfully installed the vehicle software (Col. 3, line 49-59; Fig. 3, step 306; Col. 7, line 20-22).

5. **As to claim 8** (Original), Coburn discloses said multiple processors are adapted to respond to a diagnostic query relating to software versions and upgrade history by communicating to said interface processor diagnostic information relating to identity of software versions currently installed on said multiple processors and related upgrade history (Fig. 3, step 305, step 306; Col. 5, lines 54-59).

6. **As to claim 9** (Original), Coburn discloses said multiple processors are adapted to generate diagnostic information indicating problems with the vehicle based on sensed vehicle conditions and predetermined fault detection criteria (Col. 3, lines 49-59).

7. **As to claim 10** (Original), Coburn discloses the vehicle wherein said open architecture communications port corresponds to a universal serial bus port (Col. 4, lines 14-19).

8. **As to claim 21** (new), Rogers discloses the vehicle wherein said portable memory device stores software for multiple vehicle types, and said interface processor identifies the files based at least in part on vehicle type (Abstract, Lines 4-7 – multiple distinct vehicle servicing applications may be added to or removed from the service bay without requiring substantial software changes or revisions; Fig. 7, elements 214 – Micro-Controller, 224 – MicroController, 202 – Universal Serial Bus Controller (Master), 212 – Universal Serial Bus Controller (Node), 222 – Universal Serial Bus Controller (Node); Col. 7, Line through Col. 8, Line 29 – the USB protocol is extended to the sensors that form part of the automotive service equipment; wheel alignment head contains microcontroller coupled both to angle sensor and USB controller; likewise, engine analyzer pod contains microcontroller coupled both to spark sensor and USB controller; while the details of generic sensor are not show, they will be similar to the foregoing for the sensors mentioned above; Col. 5, Lines 54-62 – further, the term "automotive service equipment" can be understood to refer as well to equipment used to service other types of vehicles as well...).

9. Claims 1-5 and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coburn in view of Kim et al., (US 2004/0019736 A1) (hereinafter 'Kim') and further in view of Roger.

10. **As to claim 1** (Currently Amended), Coburn discloses a vehicle software installation (Fig. 3, step 303), upgrade (Col. 2, lines 28-31), and diagnostic system (Col.

3, lines 49-55) for use in vehicle assembly, upgrade, and repair (Col. 1, lines 58-64), comprising:

to receive the diagnostic information via an open architecture communications port of a vehicle (Col. 3, lines 22-27) and to have an external processor architecture communications port (Fig. 2, items 110 and 140; Col. 3, lines 22-27; Col. 4, lines 14-16) and adapted to receive the diagnostic information wherein the external processor is adapted to analyze the diagnostic information (Col. 3, lines 54-59).

But, Coburn does not specifically disclose the use of a portable memory device to receive the diagnostic information.

However, in an analogous art, Kim discloses using a portable memory device to receive diagnostic information via an open architecture communications port of a vehicle ([0006], lines 1-11; [0012], lines 5-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Coburn and the teachings of Kim in order to use a portable memory device as an alternative means for transferring data/software in Coburn system.

The motivation is that since Coburn system already has USB interface in its open system architecture and adding a portable memory device with USB interface can provide a low-cost, easy-to-use, and standard approach alternative use as once suggested by Kim (i.e., [0006], lines 1-4).

Furthermore Coburn and Kim do not explicitly discloses multiple processors connected to a system bus of the vehicle and adapted to generate diagnostic

information; an interface process in communication with the open architecture communications port and connected to the system bus, wherein said interface processor is adapted to identify, for each of said multiple processors, files stored on a portable memory device connected to said open architecture communications port, to load software received over said open architecture communications port onto said multiple processor, and to transmit diagnostic information received from said multiple processors via said open architecture communications port.

However, in an analogous art of computerized automotive service equipment using multipoint serial link data transmission protocol, Rogers discloses multiple processors connected to a system bus of the vehicle and adapted to generate diagnostic information; an interface process in communication with the open architecture communications port and connected to the system bus, wherein said interface processor is adapted to identify, for each of said multiple processors, files stored on a portable memory device connected to said open architecture communications port, to load software received over said open architecture communications port onto said multiple processor, and to transmit diagnostic information received from said multiple processors via said open architecture communications port (Abstract, Lines 1-7 - a multi-point serial link protocol, such as USB, is used to transfer vehicle diagnostic information back and forth between vehicle diagnostic sensors and a host computer; Fig. 7, elements 214 – Micro-Controller, 224 – MicroController, 202 – Universal Serial Bus Controller (Master), 212 – Universal Serial Bus Controller (Node), 222 – Universal Serial Bus Controller (Node); Col. 7, Line

through Col. 8, Line 29 – the USB protocol is extended to the sensors that form part of the automotive service equipment; wheel alignment head contains microcontroller coupled both to angle sensor and USB controller; likewise, engine analyzer pod contains microcontroller coupled both to spark sensor and USB controller; while the details of generic sensor are not show, they will be similar to the foregoing for the sensors mentioned above).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Rogers into the Coburn-Kim's system to further identify, for each of said multiple processor, files stored on a portable memory device connected to said open architecture communications port in Coburn-Kim system.

The motivation is that it would further enhance the Coburn-Kim's system by taking, advancing and/or incorporating Roger's system which offers significant advantages which multiple distinct vehicle servicing applications may be added to or removed from the service bay without requiring substantial software changes or revisions; the amount of vehicle diagnostic hardware is also minimized as once suggested by Roger (i.e., Abstract, Lines 4-7).

11. **As to claim 11** (Currently Amended), Coburn discloses a vehicle software installation (Fig. 3, step 303), upgrade (Col.2, lines 28-31), and diagnostic method (Col. 3, lines 49-55) for use in vehicle assembly, upgrade, and repair (Col. 1, lines 58-64), comprising establishing communication to an interface processor (Fig. 2, items 110,

140, 200; Col. 4, lines 14-19) of a vehicle via an open architecture communications port of the vehicle (Fig. 2, items 140, 190 and 120; Col. 3, lines 22-27), wherein the interface processor (Fig. 2, item 200) is connected to multiple processors (Fig. 2, items 200, 190, 130) of the vehicle via a system bus of the vehicle (Fig. 2, items 140, 190), transferring diagnostic information from the multiple processors to the interface processor (Fig. 2, items 130, 190, 200), establishing communication to an external processor (Fig. 2, element 140; Col. 4, lines 14-16) via an open architecture communications port of an external processor and further analyzing the diagnostic information via the external processor (Col. 3,lines 54-56);

But Coburn does not specifically use a portable memory device in establishing the communication to the interface processor or the external processor.

However, in an analogous art, Kim discloses using a portable memory device to establish communication to the interface processor and to the external processor (Fig. 2, 12a, items 10 & 16a; USB port from host computer that can be either from interface processor or external processor ← → USB interface of portable memory device) and transferring diagnostic information from the interface processor to a portable memory device ([0006]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Coburn and the teachings of Kim in order to use a portable memory device in establishing the communication to the interface processor or the external processor in Coburn system.

The motivation is that since Coburn system already has USB interface in its open system architecture and using a portable memory device with USB interface can provide a low-cost, easy-to-use, and standard approach alternative use as once suggested by Kim (i.e., [0006]).

Furthermore Coburn and Kim do not explicitly discloses employing the interface processor to identify, for each of said multiple processors, files on the portable memory device, and to load software received over the open architecture communications port onto the multiple processor.

However, in an analogous art of computerized automotive service equipment using multipoint serial link data transmission protocol, Rogers discloses employing the interface processor to identify, for each of said multiple processors, files on the portable memory device, and to load software received over the open architecture communications port onto the multiple processor (Fig. 7, elements 214 – Micro-Controller, 224 – MicroController, 202 – Universal Serial Bus Controller (Master), 212 – Universal Serial Bus Controller (Node), 222 – Universal Serial Bus Controller (Node); Col. 7, Line through Col. 8, Line 29 – the USB protocol is extended to the sensors that form part of the automotive service equipment; wheel alignment head contains microcontroller coupled both to angle sensor and USB controller; likewise, engine analyzer pod contains microcontroller coupled both to spark sensor and USB controller; while the details of generic sensor are not show, they will be similar to the foregoing for the sensors mentioned above).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to combine the teachings of Rogers into the Coburn-Kim's system to further employing the interface processor to identify, for each of said multiple processors, files on the portable memory device, and to load software received over the open architecture communications port onto the multiple processor in Coburn-Kim system.

The motivation is that it would further enhance the Coburn-Kim's system by taking, advancing and/or incorporating Roger's system which offers significant advantages which multiple distinct vehicle servicing applications may be added to or removed from the service bay without requiring substantial software changes or revisions; the amount of vehicle diagnostic hardware is also minimized as once suggested by Roger (i.e., Abstract, Lines 4-7).

12. **As to claim 2** (Original), Coburn discloses external processor (Fig. 2, item 110) is adapted to analyze the diagnostic information (Col. 3, lines 54-56) in order to verify successful installation (Fig. 3, steps 305, 306) and testing of vehicle software based on the diagnostic information (Col 3. lines 49-59). Coburn also discloses the vehicle software having been transferred to vehicle processor (Fig. 2, item 130) via an interface processor connect to a system bus of the vehicle (Fig. 2, item 190; Col. 4, line 35-38; Fig. 3, steps 303, 307).

But, Coburn does not specifically disclose the vehicle software having been transferred from the portable device to vehicle processor.

However, in an analogous art, Kim discloses the vehicle software having been transferred from the portable device to vehicle processor (Fig. 1, item 12; [0006], lines 1-4; Kim also discloses a portable memory device can be used as a means to carry data via USB port).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Coburn and the teachings of Kim in order to have the vehicle software been transferred from the portable device to vehicle processors via an interface processor connected to a system bus of the vehicle in Coburn system.

The motivation is that a portable memory apparatus is a handy way to carry and can simply be connected to any USB compliance port with a microcontroller entity as once suggested by Kim (i.e., [0006], lines 1-4).

13. **As to claim 3** (Original), Coburn discloses said external processor is adapted to analyze the diagnostic information in order to identify software versions resident on the vehicle (Fig. 3, step 306; Col. 7, lines 20-22) and related upgrade history, download an appropriate software upgrade (Fig. 3, step 303) relating to the vehicle based on the software versions and upgrade history (Fig. 3, step 305; Col. 2, lines 28-36).

But, Coburn does not specifically disclose to store the appropriate software upgrade on the portable device. However, in an analogous art, Kim discloses a portable memory device can be used as a means to carry data via USB port (Fig. 1, item 12; [0006], lines 1-4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Coburn and the teachings of Kim in order to have the vehicle software been transferred from the portable device to vehicle processors via an interface processor connected to a system bus of the vehicle in Coburn system.

The motivation is that a portable memory apparatus is handy to carry and can be simply connected to any USB compliance port with a microcontroller entity as once suggested by Kim (i.e., [0006], lines 1-4).

14. **As to claim 4** (Original), Coburn discloses that the system wherein said external processor is adapted to diagnose vehicle problems based on the diagnostic information (Col. 3, lines 3-5; Col. 3, 7-13), wherein the diagnostic information is generated by vehicle processors based on sensed vehicle conditions and predetermined fault detection criteria (Col. 3, lines 50-57).

15. **As to claim 5** (Original), Coburn discloses the open architecture interface port is a universal serial bus port (Col. 3, lines 22-27).

Coburn does not disclose that the portable memory device is a universal serial bus flash disk. However, in an analogous art, Kim discloses that the portable memory device is a universal serial bus flash disk ([0007], lines 2-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Coburn and the teachings of Kim in order to use a portable memory device with USB compliance in Coburn system.

The motivation is that portable flash memory is handy and cost effective way to carry and easy to extend in its memory capacity as once suggested by Kim (i.e., [0006]).

16. **As to claim 12** (Original), Coburn does not specifically disclose transferring vehicle software from the external processor to the portable memory device.

However, in an analogous art, Kim discloses transferring vehicle software from the external processor to the portable memory device ([0007], lines 2-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Coburn and the teachings of Kim in order to use portable memory device to transfer vehicle software from the external processor in Coburn system.

The motivation is that portable flash memory is handy and cost effective to carry and easy to extend in its memory capacity and it would add an alternate means for transferring vehicle software as once suggested by Kim (i.e., [0006]).

17. **As to claim 13** (Original), Coburn discloses that the multiple processors are adapted to automatically test the vehicle software, thereby generating the diagnostic information (Col. 3, lines 51-55; Col. 6, lines 65-67) and transferring vehicle software to

the multiple processors (Fig. 3, items 190 and 130) via the interface processor (Fig. 2, item 140).

But, Coburn does not specifically disclose transferring vehicle software from the portable memory device to the multiple processors via the interface processor, wherein the multiple processors are adapted to automatically test the vehicle software, thereby generating the diagnostic information.

However, in an analogous art, Kim discloses transferring (vehicle) software (data) from the portable memory device to the multiple processors via the interface processor, wherein the multiple processors are adapted to automatically test the vehicle software, thereby generating the diagnostic information (Kim also discloses that transferring vehicle software from the portable memory device to the interface processor ([0012], lines 2-7 – flash memory → host computer (interface processor)).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Coburn and the teachings of Kim in order to use portable memory device to transfer vehicle software to the interface processor in Coburn system.

The motivation is that portable flash memory is handy and cost effective way to carry and easy to extend in its memory capacity as once suggested by Kim (i.e., [0006]).

18. **As to claim 14** (Original), Coburn discloses verifying successful vehicle software installation (Col. 5, lines 25-32) and testing based on the diagnostic information (Col. 3, lines 49-57; Col. 6, lines 51-57).

19. **As to claim 15** (Original), Coburn discloses identifying software versions resident on the vehicle (Col. 5, lines 28-30) and related upgrade history based on the diagnostic information (Fig. 3, step 306; Col. 1, lines 54-64).

20. **As to claim 16** (Original), Coburn discloses identifying and downloading via the external processor an appropriate software upgrade relating to the vehicle based on the diagnostic information (Col. 1, lines 58-64).

21. **As to claim 17** (Original), Coburn discloses the software adapted to initiate a diagnostic function with the multiple processors.

But, Coburn does not disclose preloading the portable memory device with software adapted to initiate a diagnostic function with the multiple processors.

However, in an analogous art, Kim discloses preloading the portable memory device with software ([0012], lines 7-10; record the data on the flash memory) adapted to initiate a diagnostic function with the multiple.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Coburn and the teachings of

Kim in order to preload diagnostic software on the portable memory device in Coburn system.

The motivation is that the portable flash memory is handy and cost effective way to carry and easy to extend in its memory capacity as once suggested by Kim (i.e., [0006]).

22. **As to claim 18** (Original), Coburn discloses diagnosing vehicle problems based on the diagnostic information, wherein the diagnostic information is generated by the multiple processors based on sensed vehicle conditions and predetermined fault detection criteria (Col. 3, lines 49-59).

23. **As to claim 19** (Original), Coburn discloses employing a universal serial bus port as the open architecture communications port (Col. 4, lines 14-19).

24. **As to claim 20** (Original), Coburn does not disclose employing a universal serial bus flash disk as the portable memory device.

However, in an analogous art, Kim discloses disclose comprising employing a universal serial bus flash disk as the portable memory device ([0006], lines 1-4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of both Coburn and Kim in order to use a portable memory device as an alternative means for transferring data in Coburn system.

The motivation is that since Coburn system already has USB interface in its system architecture, a portable memory device with USB interface can provide a low-cost, standard approach alternative use.

Conclusion

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben C. Wang whose telephone number is 571-270-1240. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on 571-272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BCW

TUAN DAM
SUPERVISORY PATENT EXAMINER

April 30, 2007